

THE OPERATION OF THE
Ludlow Typograph

set
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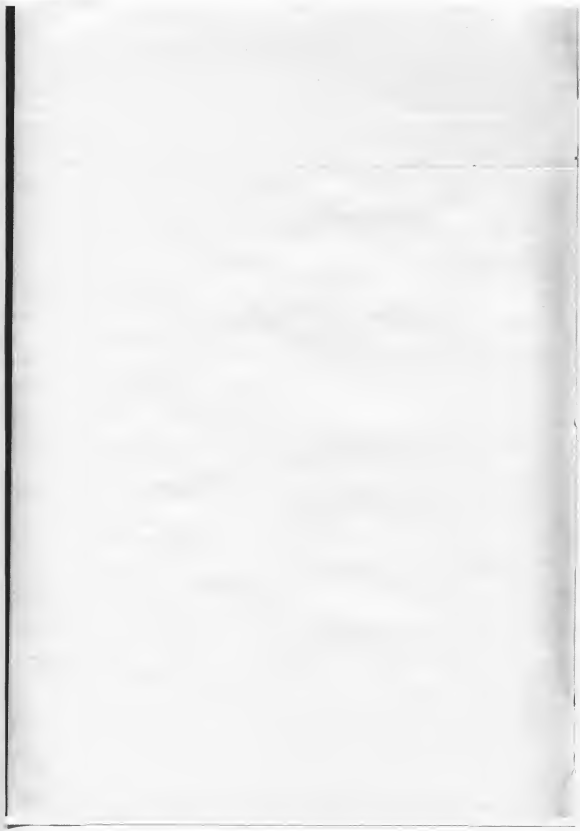


*Gift
Douglas C. McTear
Nov. 29, 1939*

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Introduction

UNIT 1

THE LUDLOW TYPOGRAPH COMPANY was formed in 1906 by the late William A. Reade to develop the original idea of Washington I. Ludlow, which consisted of a set of matrix bars, about two feet long, each of which carried an entire alphabet, with points and figures. The broad characters were placed on the wide part of the bar, and the progressively narrower letters followed to the thinner end of the bar. Thus the original device was intended for use as a straight-matter machine. The first five of these machines were manufactured in the year 1909, and were successful in their purpose.

However, during this experimental period, Mr. Reade came to appreciate the far greater need for and potential importance of equipment with which to produce display and job composition by setting individual matrices by hand and casting slug lines from them with a simple machine. The first such matrices were engraved in 1911, and were used for casting slug lines during that same year.

As soon as the success of this new idea became apparent, the manufacturers were faced with the tremendous job of producing matrices by the thousands for every character in fonts of every point size. Obviously such matrices could not continue to be engraved because of the cost; it was necessary to drive them with engraved steel punches—and in a very wide variety of typeface styles. The Ludlow Typograph Company then proceeded to design and build special machinery to meet these production requirements.

Caslon Bold in the 36-point size was produced in 1912, and a year later 24-point Caslon Light was ready. The innovation of the slanting italic matrix was introduced at that time.

The *Chicago Evening Post* installed a Ludlow in August, 1913, and the next year the *Cleveland Press* installed two machines.

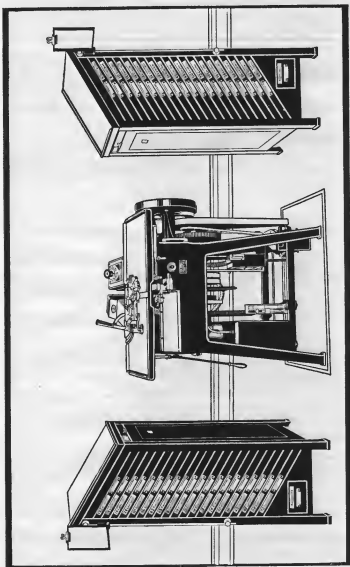


FIG. 1—Ludlow Typograph and cabinets.

The first commercial shop to use a Ludlow was Saul Brothers, of Chicago.

As soon as the Ludlow was accepted by both newspaper and commercial printing plants, Mr. Merrill turned his attention to blank form work, and in 1923 conceived the idea of the Ludlow



FIG. 2.—Ludlow matrices.

slug-aligning matrix. The accurate vertical alignment effected by this interlock has long since proved its worth. This progress was followed by the program of original type design. Notable original faces produced include Umbra, Mandate, Ultra Modern, Eusebius, Garamond, Stellar, Delphian, Eden, and Radiant. In this field the work of R. Hunter Middleton and Douglas C. McMurtrie has proved important.

This manual of instructions may be of help to those persons wishing to know how the Ludlow Typograph is operated, and the possibilities of the machine. Only through the co-operation of the manufacturers has it been possible to provide adequate illustrations.

ADVANTAGES OF LUDLOW COMPOSITION—Assembly of matrices and the casting of slug lines on the Ludlow Typograph have certain advantages, which follow:

1. Unlimited supply of type from 6- to 72-point, and 84-point title faces, is provided. Normal fonts of matrices provide for setting lines of average length. Augmented fonts must be provided to meet special requirements for setting extra

long lines. Alphabets and price figures in the larger sizes, from 120- up to and including 144-point, may be cast lengthwise on the slug.

2. New type is used for each job, saving makeready on the presses and insuring a good, clean job.

3. Fragility of overhanging kerns on certain type faces is eliminated on the Ludlow. Since with slanting matrices there are no overhanging kerns, there is nothing to break off in setting, planing-down, during presswork, or in stereotyping or electrotyping.

4. Increased speed of composition. It has been proved beyond little doubt that hand assembly and justification of Ludlow lines in matrices is done more quickly than in regular hand composition.

5. One set of spaces and quads is sufficient for all sizes of type, from 6- to 48-point sizes. Spacing is easy, as the spaces have wider "ears" than the letter characters, making for easier handling. Another set of spaces and quads is used in justifying sizes of 60-point and over.

6. There is no distribution of the type forms.

7. Justification is easy, as there is no requirement for "spacing to lift" or "allowance for squeeze" in length of lines.

8. There is no frozen investment in type or in cases or in storage, and no type to be replenished.

9. All-slug make-up is possible in any size of type face from 6 to 72 point.

10. The simplicity of operation allows the average compositor to learn the operation of the Ludlow in a very short time.

11. There is no "hunting of sorts" with the Ludlow system.

12. Automatic quadding and centering are available.

13. All the "niceties of hand spacing" are possible.
14. Lines may be recast at six a minute, for makeup of forms to print in multiple, and for the casting of blank slugs for spacing material.
15. Color separations of the most intricate forms are easily made, since practically all type lines to be removed or inserted are cast on a 12-point shank. One form only need be made up.
16. Different styles and sizes of type may be set in the same line, with no more difficulty than in setting one face and size.
17. Long lines are set in a single justification.
18. A forty-font Ludlow equipment, complete, occupies a space of only 6x12 feet.
19. It is possible to set prices and descriptive matter crosswise and to varying angles in relation to the slug, up to five picas wide, which is useful in ad work.



Composition and Casting

UNIT 2

LUDLOW COMPOSING STICKS—The sticks used in the assembly of matrices are made in various styles and for varying lengths of lines. Those usually available in Ludlow equipment are as follows, for 22½-pica mold machines:

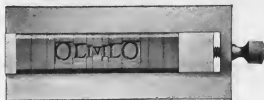


Fig. 3—Characters are driven in center alignment.

1. Roman Sticks

22½-, 45-, 67½- and 112½-pica measures, for ⅞-inch matrices (sizes of 48-point and smaller).

22½-, 45-, 67½- and 112½-pica measures, for 1¼-inch matrices (sizes of 60-point and over).

These sticks are used in general composition of Roman faces. Ratchet Stop and Index Collar Sticks, in makes of the above, allow the closing of the thumb screw to only a certain predetermined tightness, making for accuracy in height-to-paper of all characters in a slug, and making it easier to keep all lines in a block of copy accurately uniform in length.

OLIVIO

Fig. 3a—Regular Ludlow sticks center all sizes on the slug in the above manner.

2. *Italic Sticks:*

22½-, 45-, 67½- and 112½-pica measures, for ⅞-inch matrices.

22½-, 45-, 67½- and 112½-pica measures, for 1¼-inch matrices.

These sticks are used in general composition of italic faces.

MALTED MILK Pound Size 23c

Fig. 4—Line set from a drug store ad, showing all display set in one stick and cast on a single slug.

3. *Adjustable Offset Stick* for 22½-picas and 45-picas.

This stick is used in assembling and bringing into any desired alignment matrices of different sizes.

4. *Self-Centering Stick*, for ⅞-inch matrices.

This stick may be set to center on any measure, by half picas up to 24½, without insertion of any quads, in each line cast.

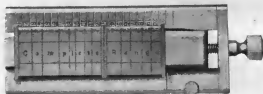


FIG. 5—A roman stick.

5. *Self-quadding Stick*, for ⅞-inch matrices.

In this stick any matter up to 22½ pica measure may be set flush left or right and quadded out automatically. This stick is also very handy in centering lines if no self-centering stick is used, as only the space at the left need be determined, and the stick closed on the matrices.

6. "6-LP" Sticks, for ⅞-inch matrices.

These sticks are made in 22½- and 45-pica sizes, and are

used with 6-point Lining Gothic type faces, which allow for the alignment of all these faces at the bottom of the 6-point slug.

These sticks are also used in the casting of ruleform matrices.

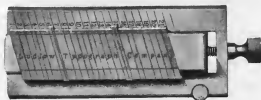


FIG. 6—An italic stick.

7. *Ratchet Stop and Index Collar Sticks* allow for the closing of the thumb screw to only a certain predetermined tightness, for reasons already specified on page 6.



FIG. 7—An adjustable offset stick.

8. *Headline Stick*, for casting $24\frac{1}{2}$ -pica lines, on a $22\frac{1}{2}$ -pica mold. The type characters overhang one pica at each end of the slug on a full $22\frac{1}{2}$ -pica measure. High spaces and quads are used at ends of lines for any lines which are not full, to give strength to the overhanging portions of the face.

CAPS AND SMALL CAPS

FIG. 8—Caps and small caps cast from 18- and 12-point matrices. An offset stick was used.



FIG. 9—Self-centering stick.

9. Blank Slug Block.

This block is used in casting blank slugs for use as spacing material and for underpinning for lines cast on the Ludlow.

10. *Mandate Sticks* are precision sticks made to keep the joining elements of this continuous script in perfect alignment.

LUDLOW MATRIX COMPOSITION—In the composition and spacing of Ludlow matrices, it is suggested that the operator follow the procedure below. It is understood that the 12-point mold is used.

1. Place copy on sliding copyholder.

2. Select the correct stick from the stick rack after observing the kind of matrices (roman or italic $\frac{7}{8}$ - or $1\frac{1}{4}$ -inch) and whether or not the self-centering or self-quadding stick will do a quicker job. Hold the stick selected as shown in Figure 14.

3. Pull out the correct matrix case, according to mark-up on copy, and gather the matrices, *holding as many as possible in the right hand before transferring them to the stick*. Pay no attention to the spacing between words.

4. When the line is completely assembled, look at the matrices closely, to see whether or not the lines cut on the backs of the matrices form straight lines, without breaks across the entire line. If

the line is broken, this means that a wrong font matrix appears at each break in the line. The line on the bottom of the matrix denotes the *point* size. The line or combination of lines on the top of the matrix denote the *series* of type. Correct if necessary. Leave the case open.

Union Alumni Slate Talk By Chancellor

FIG. 10—The self-quadding stick is used on the type of copy shown above. No quadding was used.

5. Proceed to the spacing trays. The pica graduations in each side of the stick show how many picas or fractions thereof are to be divided by the number of word spaces in that line. Ludlow spaces are graduated by points, so that it is often possible to insert spaces which will justify the line on the first trial. Point spaces run in the following sizes: $\frac{1}{2}$, 1, 2, 3, 4, 6, 12, 18, 24, 30 and 36. Quad blocks are 6, 9, and 12 picas in width.

6. Spacing is done much as in hand composition of regular foundry types or monotype sorts. The difference in Ludlow composition lies in that the spacing is done *after* the matrices are composed in the stick. One should know, therefore, that a 12-point Ludlow space can be two 6-point em quads, or a 12-point em quad, a 24-point en quad, a 36-point three em space, a 48-point four-em space, etc. If hand composition is thoroughly learned, and the point system is mastered, little difficulty will be encountered in the work of Ludlow matrix spacing.

7. Use high spaces when setting matter which will be electrotyped, when using the $24\frac{1}{2}$ -pica stick, and with 60- and 72-point matrices. The high space matrices have a deep line across the top of the matrix.

8. Tighten the matrices in the stick by turning the knob at the right side of the stick. On $22\frac{1}{2}$ -pica sticks, do not attempt to close the stick (by screwing the knob) to less than 22 picas.

LUDLOW LINE-CASTING— When the line of matrices is correctly spaced:

1. Put the stick into the Ludlow caster, casting face of the matrices *down*, and the thumb screw toward the operator, *making sure that the stick is thrust as far into the machine as possible*, and bring down the lock-down lever with the left hand, *while holding in the stick with the thumb of the right hand*. If any undue resistance is felt on the lock-down lever, take out the stick and examine it for error in setting or in placing it in the machine.

2. Press the starting lever with the right hand.

3. As soon as the lock-down lever releases, carry the matrix stick back to the spacing material tray, for the distribution of the spaces.

Do not lay down the stick for distribution "later on." This needlessly holds up matrices and sticks needed by other operators, and breeds sloppy habits.

DISTRIBUTION OF LUDLOW MATRICES AND SPACING MATERIAL

1. Make sure that the matrix case from which the line was set is open. Take the last word or part of a word (about ten picas of characters) of the line between

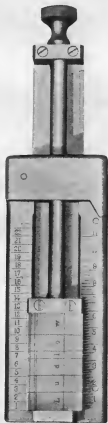


FIG. 11—A self-quadding stick.

the thumb and middle finger of the right hand, and distribute, mentally spelling the word as each character is dropped into its respective box. Be careful to distribute into the correct boxes as well as into the correct case.

2. Place the stick back on the rack whence it came.
3. Take the line just cast from the delivery table (galley) and place it on the slug tray for the make-up man.

CHAPTER II



MACHINE COMPOSITION



Page 24

FIG. 12—Typical lines set in the self-centering stick—
no quads were used.

SETTING AND CASTING LINES LONGER THAN $22\frac{1}{2}$ PICAS—All lines over $22\frac{1}{2}$ picas wide, and less than 45 picas wide are composed in the 45-pica Ludlow composing stick. In using this stick, it is necessary to insert a "division quad" to cast the line in two sections from a single justification. The procedure is as follows:

1. Select the correct stick, to suit the matrices to be used.
2. Compose the line of matrices to the measure as wanted, from 23 to 45 picas. (In matter 23 to 30 picas wide, indent the

line with a six-pica filler piece. This six pica piece can then be cut off on a saw trimmer, and will allow both sections of the slug to be of sufficient measure for easy make-up and good printing. If

LINING GOTHICS

ALIGN AT BOTTOM

FIG. 13—Lining "Gothics" align at the bottom when the "6 LP" stick is used.

this is not done on a 27-pica line, for example, $22\frac{1}{2}$ picas would appear on one slug, and the short length of $4\frac{1}{2}$ picas would appear on the second slug. It would be better to make the break somewhere nearer to the middle of the line.)

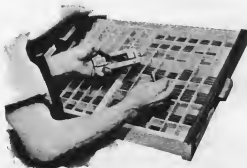


Fig. 13—Lining "Gothics" align at the bottom when the "6 LP" stick is used.

3. After the line is composed and justified, insert the division quad with the extension down, and with the *left side of the division quad* aligned as *near to the $22\frac{1}{2}$ -pica mark* on the stick as possible.

4. Insert the stick for casting as far as it will go, and cast the first section of the slug.

5. Press the stick-stop slide-knob to the right with the right thumb, and push the stick in about one-half an inch. Release the

knob, and push in stick until it stops, and then lock the stick in casting position.

6. Cast the next section of the slug.

7. Other sticks, $67\frac{1}{2}$ and $112\frac{1}{2}$ picas in length, are used in the same manner—there are merely more sections to cast, from one justification.

										1	2	3	4	5	6	7
										8	9	0	\$!	?
m	m	n	n	o	()				.	,	'	'	'	!	!
a	b	c	d	e	f	g				A	B	C	D	E	F	G
h	i	k	l	m	n	o				H	I	K	L	M	N	O
p	q	r	s	t	v	w				P	Q	R	S	T	V	W
x	y	z	j	u	-					X	Y	Z	J	U	&	

FIG. 15—The Ludlow case layout. This illustration was composed in Ludlow ruleform matrices.

8. For 60- and 72-point matrices, the division quad is placed between the *two marks on the stick*.

REPEAT CASTING—The Ludlow will cast lines at a speed of six lines a minute, and repeat casting is used on the following work:

1. To cast forms printed in multiple, for two or more forms up on press.
2. To cast blank slugs and spacing material and underpinning.
3. To cast ruleform lines.
4. To cast borders, ornaments or rules.

The procedure to follow when recasting lines is as follows:

1. Insert the blank slug block or stick of type matrices in the machine and lock in casting position.

2. Loosen the locking release tripper fulcrum screw, to allow the lock-down lever to remain in position and not release after the first slug is cast.

3. To hold the stick in place, two methods are used, "a" below being recommended when the parts are available:

a. Attach the matrix stick lock in position.

b. Release the locking guide stick lock screw, and move the locking guide stick lock into position to hold the stick. (When using this method on rule form work, it is well to examine the position of the stick after ten or twelve casts.)

4. Set the repeat recasting lever into position to allow the starting lever to continue to be turned on.

5. When sufficient slugs are cast, release the repeat casting lever.

6. Tighten the locking release tripper fulcrum screw.

7. Cast one more slug, and the stick will be released.

8. Remove the stick from the machine.



Fig. 16—A stick for use in setting lines longer than the machine's mold length. Note the "division quad."

USE OF THE CRUCIBLE PLUNGER ADJUSTING LEVER—This device is used to increase or decrease the pressure and stroke of the plunger in the pot, for various types of slugs. Six positions are possible, and their use is as follows:

Starting from the bottom:

Low Pressure:

For casting blank slugs.

Medium Pressure:

For casting 30- to 72-point.

High Pressure:

For casting 6- to 24-point and ruleform matrices.

CHANGING THE MOLD—Usually, the 12-point mold is sufficiently small to cast most of the Ludlow lines. If, however, it is necessary to set 6, 8 or 10 point, *solid* material, the mold can be changed from 12 point to 6 point. The following procedure is used:

1. Turn off the motor when machine is in normal position. Raise the top.
2. Fasten the mold-removing handle to the mold.
3. Using a small wrench, disconnect the nuts which hold the water hose to the mold.
4. Using a large screwdriver, loosen four screws which hold the mold to its base.
5. Lift the mold clear of the machine, and place it in the drawer of the matrix cabinet.
6. Using a clean rag, thoroughly clean the mold seat.
7. Fasten the mold-removing handle into the other mold, and seat it in position. Be sure that it seats properly, and that no metal or dirt is under it.

8. Remove the mold-removing handle from the mold. *Caution*—if this is not done, the machine may be damaged.
9. Replace the mold screws, tightening each alternately a fraction of a turn to insure proper seating.
10. Go over the mold screws again to insure a tight fit.
11. Attach the water connections.
12. Lower the table top and secure with latch, *being careful not to let the table drop.*
13. Cast a blank slug and examine it for quality.

IN CASE OF TROUBLE—With sensible operation and adequate daily care, the Ludlow will operate almost indefinitely in good working order. If, however, the machine is misused, the locking lever handle hammered down when a stick is not back into the correct position for casting, or parts are forced, trouble will inevitably result.

When any difficulty is encountered the first procedure of the operator should be to—

1. Call the machinist, foreman, or instructor, according to shop practice.
2. If the operator is in complete maintenance charge of the machine, see the *Ludlow Manual of Instructions* for further information.

Care of the Machine

UNIT 3

CARING FOR THE MACHINE—The first consideration in the correct maintenance of the Ludlow Typograph is to keep the machine clean and attend to routine duties. A dirty machine is a direct cause of trouble. Satisfactory operation of the machine depends upon perfect contact between matrices, mold and mouthpiece. If particles of metal or other foreign material adhere to the mold, mouthpiece or matrices, this perfect contact is impossible.

"Webber's Select" STANDING

C

Fine RIB ROAST 25 LB.

FIG. 17—A two-line set-up, showing 12-point light and bold face and 30-point cent mark cast on one line. The second line was set in one line, using 24, 48 and 12 point.

Also, if particles of metal, such as trimmings, etc., become lodged in the cams, trouble may result.

At least once a shift, the following routine duties must be performed:

1. Clean the mouthpiece.
2. Clean the plunger.
3. Dross the metal pot.
4. Oil the machine.

In each of these duties, it is best to have a definite routine, to insure that each is done properly and not forgotten. The following procedure is recommended:

1. Remove metal ingot suspended above the metal pot.
2. Raise the top to full position by releasing the table catch

and raising the lever at the left of the machine. When the lever is up, and locked, push the table to the upper auxiliary position, being careful not to let it drop, as this may break the table lifter latch.

3. Raise the crucible plunger lever pin holder.
4. Cover the mouthpiece with the mouthpiece opening shield (or galley) to prevent metal from splashing.
5. Remove the plunger from the crucible using the crucible plunger holder and well-cleaning tool-holder.
6. While the plunger is still hot, wipe off the metal and loose deposits adhering to the outer surface and apply a light applica-

"Webber's Select" **STANDING**
***Fine* RIB ROAST** **25^c** **LB.**

FIG. 18—Assembly of the lines shown in FIG. 17. Italic and bold face were cast together by using the angle quads. An offset stick was used to secure the alignment of the price and "lb." mark.

tion of Lubriclean with the asbestos swab. Allow the fluid to remain on the plunger approximately two to three minutes before brushing off with a wire brush and wiping clean with a cloth. If a hard deposit, in the form of a ring is noticed on the upper area of the plunger, it can best be removed with a strip of fine emery cloth.

7. Remove the shield covering the mouthpiece, and use the asbestos swab to place a small quantity of Mouthpiece Cleaning Fluid in the mouthpiece slot. Brush the vented surface vigorously, both lengthwise and crosswise with the wire brush.

8. While cleaning the plunger, place the well-cleaning tool in the molten metal to preheat it for immediate use by the time the plunger has been cleaned.

9. Assemble the holder of the well-cleaning tool and apply Lubriclean to the outer surface of the cleaning tool. Insert the tool into the crucible well, operating it in an up-and-down and oscillating motion the full length of the well, removing the

cleaning tool frequently to wipe off accumulated dross. Repeat until no trace of dross remains.

10. Clean the Mouthpiece Slot with the scraper supplied for that purpose. Wipe the mouthpiece clean with a dry rag.

NO. 1

TALL

C

Peaches 2 CANS 25

FIG. 19—Typical food store ad, showing three-line composition. "No. 1," "Tall" and "C" are cast on lines alone. The line starting with "Peaches," was cast in an offset stick, to align the small type "Cans."

11. Using the Special Oil for Ludlow Mouthpiece Wipers, oil the mold wiper felts, remove any metal adhering to them, and inspect for excessive wear. Change felts if they are worn.

12. Skim dross and Lubriclean residue from the surface of the metal before placing plunger in the well. Attach holder to the plunger and preheat plunger to the temperature of the molten metal; apply a thin coating of Lubriclean to the plunger and insert it in the well. Remove the holder from the plunger, and if the plunger floats freely in the well it is ready to be assembled to the plunger lever.

Care should be taken not to drop or bump the plunger or the well-cleaning tool as this may mar or upset the surface of these parts, impairing their function and resulting in damage to the well.

13. Oil the machine systematically, remembering that there are 21 oil holes and oilers. Place one drop of oil in each hole. Make sure that oil holes are not clogged with metal or dirt. Go around the machine carefully, making sure that no holes or oilers are missed. Oil the motor with three drops of good, light oil at least once a week.

14. Clean the machine with a rag and brush. Remove all surplus metal from the parts. See that the entire machine is free from dirt and excess oil. Place a small quantity of oil on each of the cams.

15. Lower the table top, taking care that the table does not fall and lock it in position.

16. Cast a blank slug and check to see if machine is operating properly.

MACHINE ADJUSTMENTS—For adjustments of the mechanism of the Ludlow Typograph, see the latest edition of the *Manual of Instructions*.

Peaches 2 NO. 1 TALL CANS 25^C

Fig. 20—The ad in Fig. 19, as assembled. No cutting of slugs was required, or fitting of type after composition.

Special Problems of Composition

UNIT 4

GENERAL COMPOSITION, when composed in matrices and cast on the Ludlow, is relatively very simple for one who has mastered type composition from ordinary type cases. If one wants to master the Ludlow Typograph, however, he should follow some sort of an outline so that he is sure he has used all the sticks available on the machine, and has set various kinds and styles of composition.

Butterscotch

Pineapple

CAKES Orange Cherry ea. 19^c

FIG. 21—Typical one- and three-line ad set-up. "Pineapple" and "Butterscotch" lines were set up on lines alone. The line starting with "Cakes," and containing four sizes of type, was cast on one slug.

The following outline, if adhered to, will include the composition of a variety of matter. The illustrations should be noted very carefully, as much can be learned from the notations below each.

SPECIAL PROBLEMS:

1. Using a $\frac{7}{8}$ -inch roman stick, set a line flush left, in caps.
2. Using a $\frac{7}{8}$ -inch roman stick, set a line flush right, in lower-case.
3. Using a $1\frac{1}{4}$ -inch stick, center a line of 60 point.
4. Using an italic stick, center a line in 15 picas.
5. Using the self-quadding stick, set a three-deck newspaper headline.
6. Using the self-quadding stick, center a line on 10 picas in 10-point matrices.

7. Using the self-centering stick, cast a 48-point period in a 22½-pica measure; the word CHAPTER in 12-point caps, 15 picas wide.

8. Using the offset stick, cast a cap and small cap line, using 14- and 12-point matrices, centered on 22½ picas.

9. Using a 45-pica roman stick, cast a full line 45 picas wide, in 48-point caps.

10. Using a 45-pica italic stick, cast a line centered on 45 picas, in 30-point italic caps and lowercase.

11. Using a 67½-pica stick, cast a full line of 48-point cap matrices.

12. Using a "6 L.P." stick, cast your name in "Gothic" type.

CAKES Butterscotch
Pineapple
Orange Cherry ea. 19c

FIG. 22—Assembly of the one- and three-line set-up. Line starting with the word "Cakes" was cast in an offset stick.

13. Duplicate as nearly as possible Figure 4 using one slug.

14. Duplicate as nearly as possible Figure 17 and 18 in two slugs only.

15. Duplicate as nearly as possible Figures 19 and 20, using three slugs.

\$.50
59

FIG. 23—Price figures in 30 and 60 point. Two-slug composition as shown, but offset stick was not used.

16. Duplicate as nearly as possible Figures 21 and 22, using three slugs.

17. Duplicate as nearly as possible Figures 23 and 24, using five slugs.

18. Duplicate the ruleform composition shown in Figure 29.

19. Duplicate the ruleform composition shown in Figure 28, including the word "Heading."

20. Duplicate the ruleform shown in Figure 31.

Tappan Divided Top
GAS RANGE

You Pay Just

\$59.50

FIG. 24—Price figures applied to an ad. The 24-, 36-, and 18-point lines were set in a self-quadding stick.

Ruleform Composition

UNIT 5

RULEFORM COMPOSITION is beautifully cast on the Ludlow Typograph. The interlocking principle keeps the vertical rules in proper alignment. If properly made up a Ludlow Rule Form makes a job that rivals the work done by wax engraving.

Examination of Figure 25 will acquaint the reader with the usual type of ruleform matrices used on the Ludlow. These matrices, set with the horizontal rule and slug aligning matrices, are all that are necessary for the work.

12 POINT	13-21	14A21	17-21	10-91 LOCK
				—
18 POINT	13-21	14A21	17-21	10-91 LOCK
				—
24 POINT	13-21	14A21	17-21	10-91 LOCK
				—

FIG. 25—Ruleform matrices in 12-, 18- and 24-point sizes



FIG. 26—Showing how ruleform matrices are cast.



FIG. 27—Twelve-point ruleform matrices locked together. The line "Heading" is a line alone, as shown in Fig. 26.



FIG. 28—Eighteen-point ruleform matrices.

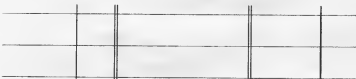


FIG. 29—Twenty-four-point ruleform matrices.

Horizontal rule matrices, used with the cross or vertical rules, are available in the following sizes: 3, 6, 8 and 10 point; and in the following pica sizes: 1, 1½, 2, 2½, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15 and 21.

After the line of ruleform matrices is set, it is a simple matter to recast, at the rate of six per minute, sufficient slugs to make up a large ruled job. One should not overlook this feature of the machine, especially in the so-called commercial printing establishments.

Attention is directed to Problems 18, 19 and 20 in the unit on *Special Problems in Composition*.



FIG. 30—Twelve-, 18- and 24-point matrices together, forming varying-sized boxes.

Operation of the Supersurfacers

UNIT 6

THE LUDLOW SUPERSURFACER, a composing room precision "slug makeready" machine, is designed to take a very light surface cut from the face of type or type slugs of any cross-section up to and including 72-point body size and slug length of 42 picas.

Mechanics of the Machine—A few facts concerning the mechanics of the machine follow:

The one-quarter horsepower motor operating the machine is mounted at the rear below the table. A molded endless V-type belt drives the cutter at the high speed of 4200 revolutions per minute.

The cutter is equipped with individual inserted blades, ground on both ends, so that the cutter may be reversed when the teeth on one side become dull.

Extending from the left side of the belt guard is a micrometer device for regulating the depth of the surface cut to within a fraction of a thousandth of an inch. This micrometer is equipped with a stop screw, the projecting head of which will contact a stop when the micrometer is turned too far in either direction.

Before the face of the slug comes in contact with the cutter it is lubricated by an oiled felt roller. This oiling prolongs the life of the cutter.

The shavings resulting from surfacing drop into a removable chip pan placed below the cutter.

Operation of the Supersurfacers: The following outline will acquaint the reader with the simple operation of the machine:

1. Place slugs to be surfaced in the slug tray rack, and place the rack in the holder provided on the machine. Do not surface slugs under 24 point in size.

Slugs previously burnished with an abrasive paper will ruin the

cutting head of the Supersurfacers. Also, type metal which contains copper will ruin the head.

2. Turn on motor switch.
3. With the carriage in forward position (nearest the operator),

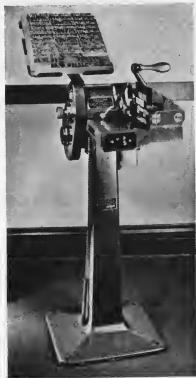


FIG. 32—The Ludlow Supersurfacers.

depress the handle to open the clamp and place the slug to be surfaced in the slug holder against the top rail at the rear of the jaw, with the ribbed side of the slug down.

4. Rub the slug back and forth against the face of the bottom

jaw and the stop rail. This has a cleaning effect on the bottom of the slug, and insures a good cut.

5. Release the handle to clamp the slug in the holder.

6. Press very lightly in a downward direction against the left slide rod, and push the slug carriage, with the slug clamped in position, across the cutter to the *extreme end* of its travel, taking a full two seconds for the carriage to travel from the front to the rear of the machine.

7. Return the carriage, which will rise automatically away from the cutter, to its original position.

8. Depress the handle and remove the slug.

9. Repeat operations 1 to 8 on each succeeding slug.

Care of the Supersurfacers—To keep the machine in good working order, care must be taken. The following parts should be lubricated with a light machine oil (Symbol A6159) furnished with the Supersurfacers by the manufacturer:

1. Motor bearing—every month.

2. Guide rods—daily.

3. The felt roller should be kept moist through the oil cups at the top of the roller. Approximately one-half a teaspoon of kerosene or very light oil should be added twice a day during normal operation.

4. The spindle should be lubricated with cylinder oil (symbol A6160, or SAE-40). The cup at the rear of the spindle housing should be filled to the top at least once a week. The oil chamber must be kept clean to keep the dirt and chips from ruining the high-speed bearings. Brush the surfaces of plug and surrounding area clean before removing filler plug.

5. A brush is attached to the Supersurfacers for removing the

chips of metal from the seat of the slug holder. *Do not use this brush on the guide rods*—the brush should be kept clean.

6. When not in use, the cutters should be kept well oiled to prevent rusting.

7. Particular care must be taken not to damage the blades of the cutter. The dislocation of one blade will destroy the quality of the surfacing.

8. Adjustments—see the instructions offered by the manufacturer for adjustments of the Supersurfacers.

